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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RATCLIFFE, LUKE D

ART UNIT PAPER NUMBER

3662

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,234

Applicant(s)

FORSTER ET AL.

Examiner

Luke D. Ratcliffe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/10/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

The finality of the office action dated 7/31/06 is withdrawn and this office action will be the replacement of the office action dated 7/31/06. The period for response has been reset for THREE MONTHS.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no discussion that the light covers at least a million measurement points at any given instant in time.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 35 and 36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims state that "the light

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projection unit projects light over at least a million measurement points at a given instant in time” however when the machine is not taking any measurements the light does not do this. The examiner understands the claim however the language needs to be clarified.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 13, 14, 17, 18, 19, 22, 23, 25, 26, 29, 30, 32, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164).

Referring to claims 1 and 19 Schuiz shows a projecting light spread (figure1) , a recording device to record reflected light (figure 1), a means for determining three-dimensional surface coordinates (column 10 lines 33-50), and means to evaluate the topographical image. However Schuiz does not show what the object is that is being measured.

Nobis teaches a similar measurement system that is used on an axle of a car to determine axle geometry. It would have been obvious to modify Schuiz to use the object sensing device for axle geometry as taught by Nobis to merely

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further implement the broad teachings of Schuiz with no new or unexpected changes.

Referring to claims 2 and 20 Schuiz shows a coding that comprise striated patterns with varying periodicity (column 9 lines 11-35). . It would have been obvious to modify Schuiz to use the object sensing device for axle geometry as taught by Nobis to merely further implement the broad teachings of Schuiz with no new or unexpected changes.

Referring to claims 4 and 22 Schuiz shows a video camera as an image converter (column 3 lines 20-60). It would have been obvious to modify Schuiz to use the object sensing device for axle geometry as taught by Nobis to merely further implement the broad teachings of Schuiz with no new or unexpected changes.

Referring to claims 5 and 23 Nobis shows a means for determining surface coordinates with triangulation (column 5 lines 20-55). It would have been obvious to modify Schuiz to use triangulation to determine surface coordinates as taught by Nobis to merely further implement the broad teachings of Schuiz with no new or unexpected changes.

Referring to claims 13 and 25 Nobis shows a means for determining properties of a wheel in addition to the axle geometry (column 5 lines 20-55). It would have been obvious to modify Schuiz to determine properties of a wheel in addition to axle geometry because these features are closely related and are easily determined together.

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Referring to claims 14 and 26 Nobis shows a means for determining properties of vehicle body areas adjoining the wheel in addition to the axle geometry (column 5 lines 20-55). It would have been obvious to modify Schuiz to determine properties of a wheel in addition to axle geometry because these features are closely related and are easily determined together.

Referring to claims 17, 29, and 30 Nobis shows a reference system that is a coordinate system of a vehicle (column 5 lines 20-55). It would have been obvious to modify Schuiz to make the reference system that of the coordinate system of the vehicle because this makes it easier to relate the wheel to the vehicle.

Referring to claims 18 and 32 Nobis shows an image converter that is a charged coupled device or a complementary metal-oxide semiconductor color camera (column 4 lines 15-25). It would have been obvious to modify Schuiz to include a charged coupled device or a complementary metal-oxide semiconductor color camera because these are common image converters.

Referring to claims 33 and 34, Nobis shows the area is at least substantially coextensive with the face of the wheel (figure 2). It would have been obvious to modify Schuiz to include the area shown in Nobis because this allows for less time the light needs to be on and therefor less wear on the light producing element.

Claims 3 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied in claims 1 and 19 above and in further view of Madey (5274433).

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Referring to claims 3 and 21 Madey shows a color coding means (column 6 lines 60-68). It would have been obvious to substitute the color coding means as taught by Madey for the varying periodicity signal as taught by Schuiz because the two coding means are equivalent and can be substituted with no new unexpected results.

Claims 15 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied to claims 14 and 26 above and further in view of Waldecker (4745469).

Referring to claims 15 and 27 Waldecker shows a measured vehicle wheel arch edge (figure 3). It would have been obvious to further modify Schuiz in view of Waldecker because it offers an accurate way to measure the wall of the wheel.

Claims 6, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied to claim 1 above and further in view of Chapin (5812256).

Referring to claim 6 Chapin shows a topographical image that includes the entire face of the wheel (column 9 and 10). It would have been obvious to modify Schuiz to include a topographical image that includes the entire face of the wheel because this will increase the accuracy of the device.

Referring to claim 7 Chapin shows a topographical image that is a ring and includes the face of the tire cover (column 9 and 10). It would have been obvious to modify Schuiz to include a topographical image that includes the entire face of the wheel because this will increase the accuracy of the device.

Referring to claim 8 Chapin shows a topographical image that includes one partial area of the face of the tire (column 9 and 10). It would have been obvious to modify Schuiz to include a topographical image that includes the entire face of the wheel because this will increase the accuracy of the device.

Claims 9, 10, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied to claims 1 and 19 above and further in view of Lill (4097157).

Referring to claims 9 and 31 Lill shows a means of taking several images of a rotating wheel (columns 6 and 7). It would have been obvious to modify Schuiz to include a means of taking several images of a rotating wheel because this is a well known way to determine the alignment of a wheel.

Lill shows a wheel that carries out at least one full rotation to determine a reference plane (columns 6 and 7). It would have been obvious to rotate the tire at least one full rotation because without a full rotation improper data could be obtained.

Claims 11, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied to claims 1 and 19 above and further in view of Jackson (5969246).

Referring to claim 11 Jackson shows a normal vector of a wheel that is used to determine the axle geometry (column 5 and 6). It would have been obvious to modify Schuiz to include a normal vector of the wheel because it increases the accuracy of the system to determine the axle geometry.

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Referring to claims 12 and 24 Jackson shows a normal vector of a wheel that is used to determine the wheel camber (column 5 and 6). It would have been obvious to modify Schuiz to include a normal vector of the wheel because it increases the accuracy of the system to determine the wheel camber.

Claims 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuiz (5198877) in view of Nobis (6397164) as applied to claims 1 and 19 above and further in view of Montani (3376411).

Referring to claims 16 and 28 Montani shows a color variant of the face of the wheel (columns 4-8). It would have been obvious to modify Schuiz to include a color variant on the face of a wheel because it aids in the topographical measurement of the wheel.

Response to Arguments

Applicant's arguments filed 1/17/06 have been fully considered but they are not persuasive. With respect the argument of the spot of light not being an area, an area is defined as "A roughly bounded part of the space on a surface" and a spot is defined as Page 7 "A place of relatively small and definite limits." While a spot is a very small area it does have definite limits or boundaries that enclose an area. Claim 1 states "projecting light spread over an area with coding over the area" the area having its antecedent basis from "an area" denotes that the area that has coding spread over it is the entire area that the projected light is spread onto. Schuiz teaches a spot, which is an area by definition stated above,

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that is color coded. The entire spot is color coded and therefor the entire area that the spot takes up is color coded.

With respect to the lack of motivation to combine, Schuiz teaches a multi stage measurement system that measures a three dimensional object and gives three dimensional information about the object being measured. However Schuiz does not specifically teach the object being a wheel or axle of a car. The other references further focus the broad three dimensional object of Schuiz to include the axle of a car and therefor Schuiz, who outputs the three dimensional information or the geometric information of the object being measured, would output the axle geometry. Other references included in the rejection such as Waldecker, Jackson, and Lill for example only include specifics that are only discussed when a wheel or axle of a car is being measured. Because Schuiz' invention pertains to all three dimensional objects it would be impossible to include the specifics of measuring every three dimensional object.

With respect to the argument that the disclosure of a color coding is not coding that the applicant claims I would like to draw attention to claim 21 where a color coding is claimed as a form a coding used by the applicant so therefor the color coding used by the reference is a type of coding. While the art does not explicitly say that the code is projected on the object it is inherent that the medium that is used to measure the distance to an object will have interaction with the object, in the case of a light the light will be projected onto the object inherently.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke D. Ratcliffe whose telephone number is 571-272-3110. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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